Image AF/1771

TRANSMITTAL LETTER (General - Patent Pending)	Docket No. 121027-015

In Re Application Of: **Toshi KOBAYASHI et al.**

Serial No.	Filing Date	Examiner	Group Art Unit
09.652,396	August 31, 2000	Elizabeth Cole	1771

Title:

NONWOVEN FABRIC AND METHOD FOR MAKING THE SAME

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith is:

Corrected Brief on Appeal (original and 2 copies)
Brief Transmittal

in the above identified application.

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Dated: **February 11, 2004**

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Signature of Person Mailing Correspondence

Michael S. Gzyb wski

Typed or Printed Name of Person Mailing Correspondence

cc:

P16A/REV01

TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. 121027-015

In Re Application Of: **Toshi KOBAYASHI et al.**

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Invention:

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Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

The fee for filing this Appeal Brief is:

☐ A check in the amount of the fee is enclosed.

☒ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No.

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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit:	1171
Attorney Docket No.:	121027-015
Applicant:	Toshio KOBAYASHI et al.
Invention:	NONWOVEN FABRIC AND METHOD FOR MAKING THE SAME
Serial No:	09/652,396
Filed:	August 31, 2000
Examiner:	Elizabeth Cole

Certificate Under 37 CFR 1.8(a)

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on February 11, 2004

Michael S. Gzybowski

CORRECTED BRIEF ON APPEAL

Commissioner for Patents
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Alexandria, VA 22313-1450

Sir:

Further to Appellants' Notice of Appeal filed September 2, 2003 in connection with the above-identified application, appellants submit the present Brief on Appeal.

REAL PARTY IN INTEREST

Appellants have assigned this application to Uni-Charm Corporation in an assignment which was executed by the inventors on April 20, 2001 and April 23, 2001, and filed in the United States

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RELATED APPEALS AND INTERFERENCES

Parent application Serial No. 09/220,223 is presently under appeal.

STATUS OF CLAIMS

Claims 4, 5 and 7-9 are pending in this application. Claims 4, 5 and 7-9 stand under final rejection, from which final rejection of claims 4, 5 and 7-9 this appeal is taken. No other claims are pending.

STATUS OF AMENDMENTS

No amendments were filed in this application after Final Rejection.

SUMMARY OF INVENTION

The present invention is directed to a nonwoven fabric and a method for making the nonwoven fabric. As discussed in the last paragraph on page 2 of appellants' specification, the

nonwoven fabric has a sufficiently high formability to facilitate formation of embosses/debosses or apertures when nonwoven fabric is intender to be used as material for kitchen papers of the like.

As disclosed in the first paragraph on page 3 of appellants' specification the nonwoven fabric 1 (Fig. 1) comprises synthetic microfibers 3 (Figs. 1 and 2) that are: 5-30 mm long; have a fineness of about 01 to 0.8 ; are present in about 90 to 10% by weight; and mixed and mechanically entangled with pulp fibers 4 (Figs. 1 and 2) that are about 2 to 7 mm long, present in about 10 to 90% by weight, so that the fabric 1 has a basis weight of about 10 to 80 g/m^2 as a whole.

The process of making the nonwoven fabric is depicted in Fig. 3. As discussed in the paragraph bridging pages 6 and 7 of appellants' specification the first step in the process of making the nonwoven fabric 1 involves forming a wet sheet 17 from a slurry (from tank 12) containing about 0.5 to 20 % by weight of a fibrous mixture dispersed in water, said fibrous mixture comprising about 90 to 10 % by weight of thermoplastic fibers 3 that are about 7 to 30 mm long and as fine as about 0.1 to 0.8 d mixed with about 10 to 90 % by weight of pulp fibers 4 that are about 2 to 7 mm long. The wet sheet 17 is placed on a support (endless belt 13) and subjected to high velocity water jet streams (including several zones - 18, 22 and 26) of about 50 to 200 kgf/cm2 to effect mechanically entangling of said fibrous mixture (in zone 22) and to obtain a nonwoven fabric. The nonwoven fabric is then passed between a pair of embossing rolls 32, 33 to produce a plurality of discrete protuberances 51 (Fig. 2) in said nonwoven fabric 1, said plurality of discrete protuberances being spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric, so as to be arranged in a two dimensional pattern across the nonwoven web as depicted in Fig. 2.

The "high formability" mentioned above allows the fibers to be "slightly oriented so far as regions defined from bases toward crests of the respective protuberances are concerned, they are randomly distributed in regions defined between each pair of the adjacent protuberances 51." (See sentence bridging pages 5-6 of appellants' specification).

As disclosed on page 7, lines 10-16 of appellants' specification, the protuberances can have conical or pyramidal shapes.

ISSUE

Whether claims 4, 5 and 7-9 are unpatentable over Manning et al. in view of Adam et al., Greenway and Benson et al. under 35 U.S.C. §103(a).

GROUPING OF CLAIMS

Claims 4, 5 and 7-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Manning et al. in view of Adam et al., Greenway and Benson et al.

THE REFERENCES

The following references are relied upon by the examiner:

U.S. 5,914,084	Benson et al.	Jun. 22, 1999
U.S. 5,573,841	Adam et al.	Nov. 12, 1996
U.S. 5,281,461	Greenway et al.	Jan. 25, 1994

BRIEF DESCRIPTION OF THE REFERENCES

Benson et al. discloses a method of making a stabilized extensible nonwoven web that involves subjecting a neckable nonwoven web to a tensioning force to neck the nonwoven web and subjecting the necked nonwoven web to mechanical stabilization to provide a stabilized extendible necked nonwoven web. The mechanical stabilization process involves forming embossments that extend from one edge of the necked nonwoven web to the other edge as discussed in the paragraph bridging columns 7 and 8.

Adam et al. discloses a hydraulically entangled autogenous-bonding, nonwoven composite fabric that is produced by superimposing a layer of fibrous material 18 and a matrix of substantially continuous thermoplastic polymer filaments 20 together and subjecting these two superimposed layers to hydraulic entanglement to entangle the fibrous material with the filaments of the continuous filament nonwoven web.

Greenway et al. discloses an apparatus and related process for entangling a fibrous wed which involves positioning a fibrous web on a support that includes void areas or apertures and directing a fluid curtain into discrete concentrated patterns corresponding to the voids areas as discussed at column 6, lines 4-11.

Manning et al. discloses a method of preparing a highly absorbent nonwoven fabric that involves superimposing a plurality of "preformed wet-laid webs 11, 12, 13 and 14" on a woven polyester screen and subjecting the superimposed preformed wet-laid webs to hydroentanglement to form a uniform fabric web 40.

THE REJECTIONS

Claims 4, 5 and 7-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Manning et al. in view of Adam et al., Greenway and Benson et al.

The examiner has relied upon Manning et al. as disclosing a method of making a nonwoven fabric comprising the steps of forming a slurry of pulp fibers and thermoplastic fibers, depositing the fibers to form a wet sheet and hydraulically entangling the fibers. The examiner states that Manning et al. teaches fibers that have the dimensions claimed by appellants.

The examiner conceded that Manning et al. does not disclose the weight percent of the fibers in the slurry.

The examiner has accordingly relied upon Adam et al. as in forming a fibrous slurry that slurry should contain about 0.01 to 1.5 percent by weight of fibers.

In combining the teachings of Manning et al. and Adam et al., the examiner takes the position that "it would have been obvious....to have formed the slurry of Manning et al so that is comprised 0.01 to 1.5 percent by weight fibers."

The examiner has conceded that neither Manning et al. nor Adam et al. that the hydroentangling step should also form protuberances on the nonwoven fabric.

The examiner has accordingly relied upon Greenway et al. as teaching that hydroentangling a fibrous web against a support surface which has a plurality of conical protrusions produces a web which has a uniform and repeating pattern of nodes which have a conical shape.

In combining the teachings of Manning et al., Adam et al. and Greenway et al. the examiner takes the position that:

> It would have been obvious....to have hydroentangled the web of Manning et al as taught by Greenway et al in order to both entangle and pattern the fibrous web.

The examiner concedes that Greenway et al. does not disclose the use of a smooth roll and a patterned roll to form the embossments.

The examiner has accordingly relied upon Benson et al. as teaching that either two patterned rolls may be used or a smooth roll and a patterned roll may be used to emboss hydroentangled fabrics.

In combining the teachings of Manning et al., Adam et al., Greenway et al. and Benson et al. the examiner takes the position that:

> It would have been obvious to have employed one smooth roll and one patterned roll to emboss the fabric of Greenway.

ARGUMENT

It is respectfully submitted that the prior art relied upon by the examiner do not render appellants' claimed invention obvious under 35 U.S.C. §103(a) inasmuch as none of the references alone or in combination teach or otherwise suggest the structural limitations set for in appellants' pending claims.

As noted above, the examiner has relied upon Manning et al. as disclosing a method of making a nonwoven fabric comprising the steps of forming a slurry of pulp fibers and thermoplastic fibers, depositing the fibers to form a wet sheet and hydraulically entangling the fibers. The examiner states that Manning et al. teaches fibers that have the dimensions claimed by appellants.

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In combining the teachings of Manning et al., Adam et al., Greenway et al. and Benson et al. the examiner takes the position that:

> It would have been obvious to have employed one smooth roll and one patterned roll to emboss the fabric of Greenway.

As the examiner concedes, neither Manning et al. nor Adam et al. teach forming protuberances on the nonwoven fabric.

Benson et al. teaches the formation of protuberances as the examiner correctly notes. However, the teachings of Benson et al. are not applicable to either Manning et al. or Adam et al. for several reasons.

In particular, the protuberances of Benson et al. are taught as providing a specific function which is not required by Manning et al. Accordingly, there is a complete lack of motivation for providing Manning et al. with the protuberances of Benson et al.

In addition, appellants' claimed discrete protuberances are structurally distinguishable from the protuberances of Benson et al.

Benson et al. describes a "stable nonwoven web having an enhanced extensibility" that is prepared by mechanically "necking" a nonwoven web and forming "stabilizing embossments" that extend "across the stabilized necked nonwoven web 12 from one edge to the other edge."

Benson et al. teach that having the embossments extend across the width of the web "is very important as this sets the fibers across the entire width of the web thereby stabilizing the web."

In Fig. 8 Benson et al. depicts "a spaced apart pattern of embossments" that "would not effectively set the nonwoven web."

Manning et al. does not teach necking the hydroentangled web.

In Manning et al, a number of preformed wet-laid webs are superposed together and then subjected to a series of water jets to cause hydroentanglement of the fibers of the webs. The hydroentangled webs are thereafter dried "by conventional drying apparatus" and then subject to embossing.

Absent teaching a step of necking the nonwoven fabric, there is no motivation in Manning et al. to form the "stabilizing" embossments of Benson et al.

That is, the only purpose for providing the embossments of Benson et al. is to stabilize the necking of the web. Absent performing a necking step in Manning et al., the embossments taught by Benson et al. provide no function and therefore their incorporation into Manning et al. according to the examiner's proposed "obvious" combination is not obvious for any reason found in the teachings of these references.

Even if the embossments of Benson et al. were incorporated into Manning et al. the resulting web would be structurally different from appellants' claimed invention which requires a plurality of discrete protuberances which are "spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric."

If anything, the shape or patterns of appellants' claimed protuberances are more comparable to Fig. 8 of Benson et al. which Benson et al. teaches "would not effectively set the nonwoven web."

Accordingly, Benson et al. actually teaches against the use of discrete protuberances which are spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric.

The examiner states that Greenway et al. has been relied upon as teaching that hydroentangling a fibrous web against a support surface which has a plurality of conical protrusions produces a web which has a uniform and repeating pattern of nodes which have a conical shape.

Greenway et al. **does not teach** a "support surface which has a plurality of conical protrusions" as the examiner purports.

Accordingly, the examiner's reliance upon Greenway et al. is improper and the rejection of the claims which is based upon the improper reliance upon Greenway et al. should properly be withdrawn.

Rather than teach a "support surface which has a plurality of conical protrusions" as the examiner states, Greenway teach employing "an entangling member for supporting the web including a symmetrical pattern of fluid pervious void areas." (See column 2, lines 38-40)

At column 2, lines 52-60 Greenway et al, teach that: "In a preferred embodiment the entangling member is formed from a plate including a plurality of generally circular apertures." Preferred entangling results are obtained by provision of baffle members including a radius curvature which define apertures having a 'frusto-conical' configuration."

It is further pointed out that in addition to requiring apertures rather than protrusions, Greenway et al. teaches that during the hydroentanglement "control means are provided for focusing fluid energy associated with the fluid curtain into discrete concentrated pattern corresponding to the symmetrical void areas 54 of entangling member 52." (See column 6, lines 4-8)

Rather than teach a "support surface which has a plurality of conical protrusions" as the examiner states, Greenway et al. teach a support plate with voids or apertures. Moreover, Greenway et al. teach that the fluid jets are concentrated in patterns which are directed at the voids or apertures. The result is a pattern of dense nodes which correspond to the aperture pattern as taught at column 7, lines 36-41.

It is accordingly submitted that Greenway et al. does not teach a "support surface which has a plurality of conical protrusions." Moreover, it is submitted that Greenway et al.'s use of a support plate with apertures results in a unique structural embodiment of a textured nonwoven fabric with high density nodes.

Based upon the above, it is submitted that the examiner's reliance upon Greenway et al. is improper and the rejection of the claims based upon the misinterpretation of Greenway et al.

It is noted that Greenway et al. is concerned with producing a "textured" nonwoven fabric which is characterized by the high density nodes.

Manning et al. is concerned with producing a highly absorbent nonwoven fabric that has "clothlike softness and texture."

Manning et al.'s goal of ensuring softness would be lost or destroyed if the process of Greenway et al. were employed and the result was a nonwoven fabric with a pattern of high density nodes.

Accordingly, absent improper reliance upon appellants' own disclosure, there is no motivation to combine the teachings of Manning et al. and Greenway et al. in the manner suggested by the examiner.

Therefore, the combination of Manning et al. and Greenway et al. (and Adam et al. and Benson et al.) is improper under 35 U.S.C. §103 which requires that the prior art relied upon to reject claims under 35 U.S.C. §103 must provide a suggestion or motivation for the combination.

Note the holding in *Smithkline Diagnostics, Inc. v. Helena Laboratories Corp.*:

> The Examiner cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention; the Examiner has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination. *Id.* 8 USPQ 2d 1468, 1475 (Fed. Cir. 1988)

Also see *In re Wesslau*:

> It is impermissible within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. *Id.* 147 USPQ 391 (CCPA 1965)

On page 3 of the Office Action the examiner states that:

> It would have been obvious to have employed one smooth roll and one patterned roll to emboss the fabric of Greenway.

It is submitted that it is not obvious at all to take the fabric of Greenway et al. that is textured with high density nodes and employ the process of Benson et al. which utilizes embossing rolls.

The embossing rolls of Benson et al. would destroy the textured pattern provided by Greenway et al. if used on the fabric of Greenway et al.

If the examiner suggests using the process of Benson et al. to produce the textured fabric of Greenway et al., it is submitted that the high density nodes of Greenway et al. would be lost because fluid jets that are concentrated and directed at the apertures in a support plate are required to produce the high density nodes. Benson et al. lacks such provisions.

If the high density nodes are eliminated, the teachings of Greenway et al. would be destroyed and the combination of Greenway et al. and Benson et al. would be improper under the Board of Patent Appeals and Interferences in *Ex Parte Hartmann*:

> References cannot properly be combined if effect would destroy invention on which one of reference patents is based. *Id.*186 USPQ 366 (PTO Bd App 1974)

Accordingly, the combination of Greenway et al. and Benson et al. is improper as is the overall combination of Manning et al., Adam et al., Greenway et al. and Benson et al.

Manning et al. involves hydroentangling four (4) preformed wet-laid webs.

Adam et al. involves a hydroentangling a superimposed fibrous material and a matrix of substantially continuous thermoplastic polymer filaments so as to drive the fibrous material into the matrix.

Greenway et al. teaches a hydroentangling process which involves the use of a support having void areas and water jets that are concentrated at the void areas.

Appellants' claimed process involves providing a wet sheet from a slurry of fibers, supporting the wet sheet on a support and subjecting the supported wet sheet to hydroentanglement to form a nonwoven fabric. The nonwoven fabric is then embossed.

The examiner's proposal to combine the teachings of Manning et al., Adam et al and Greenway et al., because:

> It would have been obvious....to have hydroentangled the web of Manning et al as taught by Greenway et al in order to both entangle and pattern the fibrous web,

overlooks the fact the entanglement of the wet sheet to form the nonwoven fabric and embossing of the nonwoven fabric are claimed as two separate steps in appellants' claimed method.

Each of the method steps comprises a limitation of appellants' claimed invention.

Inasmuch as the proposed combination excludes a limitation appellants recite in their claims, the combination does not render the claimed invention obvious.

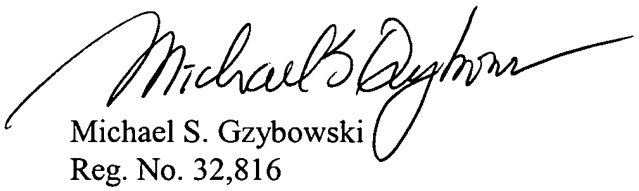
CONCLUSION

For the reasons advanced above, appellants respectfully contend that the rejection of claims 4, 5 and 7-9 as being obvious under 35 U.S.C. §103(a) over Manning et al. in view of Adam et al., Greenway and Benson et al. is improper because the examiner has not met her burden of establishing a *prima facie* case of obviousness.

Reversal of the rejection on appeal is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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CLAIMS ON APPEAL

4. A method of making a nonwoven fabric containing thermoplastic synthetic microfibers, said method comprising the steps of:

a. providing a wet sheet from a slurry containing about 0.5 to 20 % by weight of a fibrous mixture dispersed in water, said fibrous mixture comprising about 90 to 10 % by weight of thermoplastic fibers that are about 7 to 30 mm long and as fine as about 0.1 to 0.8 d mixed with about 10 to 90 % by weight of pulp fibers that are about 2 to 7 mm long;

b. placing said wet sheet on a support;

c. subjecting said wet sheet to high velocity water jet streams of about 50 to 200 kgf/cm2 to effect mechanically entangling of said fibrous mixture and to obtain a nonwoven fabric; and

d. passing said nonwoven fabric between a pair of embossing rolls to produce a plurality of discrete protuberances in said nonwoven fabric, said plurality of discrete protuberances being spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric.

Claim 5. A method according to Claim 4, wherein said thermoplastic synthetic fiber comprises melt blown fibers.

Claim 6. A method according to Claim 4 wherein said support has a plurality of protuberances formed on a surface thereof and the mechanical entanglement if the fibrous mixture and formation of the protuberances are performed in a common step.

Claim 7 A method according to Claim 4, wherein said plurality of protuberances have conical or pyramidal shapes.

Claim 8. A method according to Claim 4, further comprising forming the nonwoven sheet with a plurality of apertures.

Claim 9. A method according to Claim 4, wherein the plurality of protuberances formed in the nonwoven fabric comprise discrete protuberances that are arranged in a two dimensional pattern across the nonwoven fabric.

PATENT APPLICATION

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The process of making the nonwoven fabric is depicted in Fig. 3. As discussed in the paragraph bridging pages 6 and 7 of appellants' specification the first step in the process of making the nonwoven fabric 1 involves forming a wet sheet 17 from a slurry (from tank 12) containing about 0.5 to 20 % by weight of a fibrous mixture dispersed in water, said fibrous mixture comprising about 90 to 10 % by weight of thermoplastic fibers 3 that are about 7 to 30 mm long and as fine as about 0.1 to 0.8 d mixed with about 10 to 90 % by weight of pulp fibers 4 that are about 2 to 7 mm long. The wet sheet 17 is placed on a support (endless belt 13) and subjected to high velocity water jet streams (including several zones - 18, 22 and 26) of about 50 to 200 kgf/cm2 to effect mechanically entangling of said fibrous mixture (in zone 22) and to obtain a nonwoven fabric. The nonwoven fabric is then passed between a pair of embossing rolls 32, 33 to produce a plurality of discrete protuberances 51 (Fig. 2) in said nonwoven fabric 1, said plurality of discrete protuberances being spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric, so as to be arranged in a two dimensional pattern across the nonwoven web as depicted in Fig. 2.

The "high formability" mentioned above allows the fibers to be "slightly oriented so far as regions defined from bases toward crests of the respective protuberances are concerned, they are randomly distributed in regions defined between each pair of the adjacent protuberances 51." (See sentence bridging pages 5-6 of appellants' specification).

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The examiner has accordingly relied upon Adam et al. as in forming a fibrous slurry that slurry should contain about 0.01 to 1.5 percent by weight of fibers.

In combining the teachings of Manning et al. and Adam et al., the examiner takes the position that "it would have been obvious....to have formed the slurry of Manning et al so that is comprised 0.01 to 1.5 percent by weight fibers."

The examiner has conceded that neither Manning et al. nor Adam et al. that the hydroentangling step should also form protuberances on the nonwoven fabric.

The examiner has accordingly relied upon Greenway et al. as teaching that hydroentangling a fibrous web against a support surface which has a plurality of conical protrusions produces a web which has a uniform and repeating pattern of nodes which have a conical shape.

In combining the teachings of Manning et al., Adam et al. and Greenway et al. the examiner takes the position that:

> It would have been obvious....to have hydroentangled the web of Manning et al as taught by Greenway et al in order to both entangle and pattern the fibrous web.

The examiner concedes that Greenway et al. does not disclose the use of a smooth roll and a patterned roll to form the embossments.

The examiner has accordingly relied upon Benson et al. as teaching that either two patterned rolls may be used or a smooth roll and a patterned roll may be used to emboss hydroentangled fabrics.

In combining the teachings of Manning et al., Adam et al., Greenway et al. and Benson et al. the examiner takes the position that:

> It would have been obvious to have employed one smooth roll and one patterned roll to emboss the fabric of Greenway.

ARGUMENT

It is respectfully submitted that the prior art relied upon by the examiner do not render appellants' claimed invention obvious under 35 U.S.C. §103(a) inasmuch as none of the references alone or in combination teach or otherwise suggest the structural limitations set for in appellants' pending claims.

As noted above, the examiner has relied upon Manning et al. as disclosing a method of making a nonwoven fabric comprising the steps of forming a slurry of pulp fibers and thermoplastic fibers, depositing the fibers to form a wet sheet and hydraulically entangling the fibers. The examiner states that Manning et al. teaches fibers that have the dimensions claimed by appellants.

The examiner conceded that Manning et al. does not disclose the weight percent of the fibers in the slurry.

The examiner has accordingly relied upon Adam et al. as in forming a fibrous slurry that slurry should contain about 0.01 to 1.5 percent by weight of fibers.

In combining the teachings of Manning et al. and Adam et al., the examiner takes the position that "it would have been obvious....to have formed the slurry of Manning et al so that is comprised 0.01 to 1.5 percent by weight fibers."

The examiner has conceded that neither Manning et al. nor Adam et al. that the hydroentangling step should also form protuberances on the nonwoven fabric.

The examiner has accordingly relied upon Greenway et al. as teaching that hydroentangling a fibrous web against a support surface which has a plurality of conical protrusions produces a web which has a uniform and repeating pattern of nodes which have a conical shape.

In combining the teachings of Manning et al., Adam et al. and Greenway et al. the examiner takes the position that:

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The examiner concedes that Greenway et al. does not disclose the use of a smooth roll and a patterned roll to form the embossments.

The examiner has accordingly relied upon Benson et al. as teaching that either two patterned rolls may be used or a smooth roll and a patterned roll may be used to emboss hydroentangled fabrics.

In combining the teachings of Manning et al., Adam et al., Greenway et al. and Benson et al. the examiner takes the position that:

> It would have been obvious to have employed one smooth roll and one patterned roll to emboss the fabric of Greenway.

As the examiner concedes, neither Manning et al. nor Adam et al. teach forming protuberances on the nonwoven fabric.

Benson et al. teaches the formation of protuberances as the examiner correctly notes. However, the teachings of Benson et al. are not applicable to either Manning et al. or Adam et al. for several reasons.

In particular, the protuberances of Benson et al. are taught as providing a specific function which is not required by Manning et al. Accordingly, there is a complete lack of motivation for providing Manning et al. with the protuberances of Benson et al.

In addition, appellants' claimed discrete protuberances are structurally distinguishable from the protuberances of Benson et al.

Benson et al. describes a "stable nonwoven web having an enhanced extensibility" that is prepared by mechanically "necking" a nonwoven web and forming "stabilizing embossments" that extend "across the stabilized necked nonwoven web 12 from one edge to the other edge."

Benson et al. teach that having the embossments extend across the width of the web "is very important as this sets the fibers across the entire width of the web thereby stabilizing the web."

In Fig. 8 Benson et al. depicts "a spaced apart pattern of embossments" that "would not effectively set the nonwoven web."

Manning et al. does not teach necking the hydroentangled web.

In Manning et al, a number of preformed wet-laid webs are superposed together and then subjected to a series of water jets to cause hydroentanglement of the fibers of the webs. The hydroentangled webs are thereafter dried "by conventional drying apparatus" and then subject to embossing.

Absent teaching a step of necking the nonwoven fabric, there is no motivation in Manning et al. to form the "stabilizing" embossments of Benson et al.

That is, the only purpose for providing the embossments of Benson et al. is to stabilize the necking of the web. Absent performing a necking step in Manning et al., the embossments taught by Benson et al. provide no function and therefore their incorporation into Manning et al. according to the examiner's proposed "obvious" combination is not obvious for any reason found in the teachings of these references.

Even if the embossments of Benson et al. were incorporated into Manning et al. the resulting web would be structurally different from appellants' claimed invention which requires a plurality of discrete protuberances which are "spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric."

If anything, the shape or patterns of appellants' claimed protuberances are more comparable to Fig. 8 of Benson et al. which Benson et al. teaches "would not effectively set the nonwoven web."

Accordingly, Benson et al. actually teaches against the use of discrete protuberances which are spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric.

The examiner states that Greenway et al. has been relied upon as teaching that hydroentangling a fibrous web against a support surface which has a plurality of conical protrusions produces a web which has a uniform and repeating pattern of nodes which have a conical shape.

Greenway et al. **does not teach** a "support surface which has a plurality of conical protrusions" as the examiner purports.

Accordingly, the examiner's reliance upon Greenway et al. is improper and the rejection of the claims which is based upon the improper reliance upon Greenway et al. should properly be withdrawn.

Rather than teach a "support surface which has a plurality of conical protrusions" as the examiner states, Greenway teach employing "an entangling member for supporting the web including a symmetrical pattern of fluid pervious void areas." (See column 2, lines 38-40)

At column 2, lines 52-60 Greenway et al, teach that: "In a preferred embodiment the entangling member is formed from a plate including a plurality of generally circular apertures." Preferred entangling results are obtained by provision of baffle members including a radius curvature which define apertures having a 'frusto-conical' configuration."

It is further pointed out that in addition to requiring apertures rather than protrusions, Greenway et al. teaches that during the hydroentanglement "control means are provided for focusing fluid energy associated with the fluid curtain into discrete concentrated pattern corresponding to the symmetrical void areas 54 of entangling member 52." (See column 6, lines 4-8)

Rather than teach a "support surface which has a plurality of conical protrusions" as the examiner states, Greenway et al. teach a support plate with voids or apertures. Moreover, Greenway et al. teach that the fluid jets are concentrated in patterns which are directed at the voids or apertures. The result is a pattern of dense nodes which correspond to the aperture pattern as taught at column 7, lines 36-41.

It is accordingly submitted that Greenway et al. does not teach a "support surface which has a plurality of conical protrusions." Moreover, it is submitted that Greenway et al.'s use of a support plate with apertures results in a unique structural embodiment of a textured nonwoven fabric with high density nodes.

Based upon the above, it is submitted that the examiner's reliance upon Greenway et al. is improper and the rejection of the claims based upon the misinterpretation of Greenway et al.

It is noted that Greenway et al. is concerned with producing a "textured" nonwoven fabric which is characterized by the high density nodes.

Manning et al. is concerned with producing a highly absorbent nonwoven fabric that has "clothlike softness and texture."

Manning et al.'s goal of ensuring softness would be lost or destroyed if the process of Greenway et al. were employed and the result was a nonwoven fabric with a pattern of high density nodes.

Accordingly, absent improper reliance upon appellants' own disclosure, there is no motivation to combine the teachings of Manning et al. and Greenway et al. in the manner suggested by the examiner.

Therefore, the combination of Manning et al. and Greenway et al. (and Adam et al. and Benson et al.) is improper under 35 U.S.C. §103 which requires that the prior art relied upon to reject claims under 35 U.S.C. §103 must provide a suggestion or motivation for the combination.

Note the holding in *Smithkline Diagnostics, Inc. v. Helena Laboratories Corp.*:

> The Examiner cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention; the Examiner has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination. *Id.* 8 USPQ 2d 1468, 1475 (Fed. Cir. 1988)

Also see *In re Wesslau*:

> It is impermissible within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. *Id.* 147 USPQ 391 (CCPA 1965)

On page 3 of the Office Action the examiner states that:

> It would have been obvious to have employed one smooth roll and one patterned roll to emboss the fabric of Greenway.

It is submitted that it is not obvious at all to take the fabric of Greenway et al. that is textured with high density nodes and employ the process of Benson et al. which utilizes embossing rolls.

The embossing rolls of Benson et al. would destroy the textured pattern provided by Greenway et al. if used on the fabric of Greenway et al.

If the examiner suggests using the process of Benson et al. to produce the textured fabric of Greenway et al., it is submitted that the high density nodes of Greenway et al. would be lost because fluid jets that are concentrated and directed at the apertures in a support plate are required to produce the high density nodes. Benson et al. lacks such provisions.

If the high density nodes are eliminated, the teachings of Greenway et al. would be destroyed and the combination of Greenway et al. and Benson et al. would be improper under the Board of Patent Appeals and Interferences in *Ex Parte Hartmann*:

> References cannot properly be combined if effect would destroy invention on which one of reference patents is based. *Id.* 186 USPQ 366 (PTO Bd App 1974)

Accordingly, the combination of Greenway et al. and Benson et al. is improper as is the overall combination of Manning et al., Adam et al., Greenway et al. and Benson et al.

Manning et al. involves hydroentangling four (4) preformed wet-laid webs.

Adam et al. involves a hydroentangling a superimposed fibrous material and a matrix of substantially continuous thermoplastic polymer filaments so as to drive the fibrous material into the matrix.

Greenway et al. teaches a hydroentangling process which involves the use of a support having void areas and water jets that are concentrated at the void areas.

Appellants' claimed process involves providing a wet sheet from a slurry of fibers, supporting the wet sheet on a support and subjecting the supported wet sheet to hydroentanglement to form a nonwoven fabric. The nonwoven fabric is then embossed.

The examiner's proposal to combine the teachings of Manning et al., Adam et al and Greenway et al., because:

> It would have been obvious....to have hydroentangled the web of Manning et al as taught by Greenway et al in order to both entangle and pattern the fibrous web,

overlooks the fact the entanglement of the wet sheet to form the nonwoven fabric and embossing of the nonwoven fabric are claimed as two separate steps in appellants' claimed method.

Each of the method steps comprises a limitation of appellants' claimed invention.

Inasmuch as the proposed combination excludes a limitation appellants recite in their claims, the combination does not render the claimed invention obvious.

CONCLUSION

For the reasons advanced above, appellants respectfully contend that the rejection of claims 4, 5 and 7-9 as being obvious under 35 U.S.C. §103(a) over Manning et al. in view of Adam et al., Greenway and Benson et al. is improper because the examiner has not met her burden of establishing a *prima facie* case of obviousness.

Reversal of the rejection on appeal is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,

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CLAIMS ON APPEAL

4. A method of making a nonwoven fabric containing thermoplastic synthetic microfibers, said method comprising the steps of:

a. providing a wet sheet from a slurry containing about 0.5 to 20 % by weight of a fibrous mixture dispersed in water, said fibrous mixture comprising about 90 to 10 % by weight of thermoplastic fibers that are about 7 to 30 mm long and as fine as about 0.1 to 0.8 d mixed with about 10 to 90 % by weight of pulp fibers that are about 2 to 7 mm long;

b. placing said wet sheet on a support;

c. subjecting said wet sheet to high velocity water jet streams of about 50 to 200 kgf/cm2 to effect mechanically entangling of said fibrous mixture and to obtain a nonwoven fabric; and

d. passing said nonwoven fabric between a pair of embossing rolls to produce a plurality of discrete protuberances in said nonwoven fabric, said plurality of discrete protuberances being spaced apart from one another in both a longitudinal and a transverse direction of the nonwoven fabric.

Claim 5. A method according to Claim 4, wherein said thermoplastic synthetic fiber comprises melt blown fibers.

Claim 6. A method according to Claim 4 wherein said support has a plurality of protuberances formed on a surface thereof and the mechanical entanglement if the fibrous mixture and formation of the protuberances are performed in a common step.

Claim 7 A method according to Claim 4, wherein said plurality of protuberances have conical or pyramidal shapes.

Claim 8. A method according to Claim 4, further comprising forming the nonwoven sheet with a plurality of apertures.

Claim 9. A method according to Claim 4, wherein the plurality of protuberances formed in the nonwoven fabric comprise discrete protuberances that are arranged in a two dimensional pattern across the nonwoven fabric.